

**VERSION WITH MARKINGS SHOWING CHANGES MADE –
SPECIFICATION**

[Infusion Bag, Especially for Making Tea]INFUSION BAG, IN PARTICULAR FOR
PREPARING TEA

TECHNICAL FIELD OF THE INVENTION

[This invention concerns an infusion bag, especially for making tea, with chambers that contain a quantity of substance and are composed of a filter material.] The present invention concerns an infusion bag, in particular for preparing tea, with a suspension unit made of a sheet-like carrier material with chambers consisting of a filter material, in each case containing an amount of a substance, which are connected with the suspension unit on a common edge.

BACKGROUND OF THE INVENTION

[Infusion bags for tea in different forms of embodiment are common; it has become prevalent to use two-chamber infusion bags with chambers arranged next to one another side by side, each having a quantity of the tea product in the form of dried, crushed tea leaves. The two chambers are connected to one another at the base by a crosswise fold, also called a base fold, to which a string is attached with a tag. Generally, a top closing fold is produced in two phases in which the corners of the infusion bag are folded down in the first phase and the trapezoidal part remaining at the top is turned down in the second. Then the folded parts are attached together and the end of the string is attached at the same time. This type of two-chamber infusion bag is known, for example from German Patent 1 001 944 by the applicant, and is composed of an easily permeable material which makes it possible for the infusion fluid to break down the material to be extracted, especially tea, and to dissolve the substance contained therein. Filter paper materials, in particular, are used for this.] Infusion bags for tea are known in different designs. In particular the use of double-edged infusion bags which have two chambers lying side by side arranged next to each other, which in each case contain an amount of

tea in the form of dried and pulverized tea leaves, has become common. The two chambers are connected with one another on the bottom by a transverse fold, also called a bottom fold, and closed on their top end jointly by a connecting edge, on which a thread with a label is fastened. As a rule a top sealing fold for this is made in two procedures, into which fold the edges of the infusion bag are folded in a first procedure and in a second procedure the trapezoidal part remaining at the top is wrapped around. Thereupon the folded-in parts are connected to one another with simultaneous fastening of a thread end. A double-chambered infusion bag of this kind is known, for example in the applicants German Patent Specification 1 001 944 and consists of an easily permeable material which makes it possible for the infusion liquid to solubilize the substance to be leached out, in particular the tea, and to dissolve the substances contained. In particular filter paper is used for this.

[To attach the string to the infusion bag and to the tag, and to connect the top ends of a two-chamber infusion bag, for example, it is known how to use metal clamps, so-called hooks, which are arranged near the fold on the top end of the infusion bag or on the tag. It is also common to glue the string between the top end of the infusion bag and the tag to it, for example with materials that can be heat-sealed and the like.] For fastening the thread to the infusion bag, respectively to the label and, for example, for connecting the top ends of a double-edged infusion bag, it is known to use sealing clamps made of metal - so-called clasps, which are located in the area of the fold of the top end of the infusion bag, respectively on the label. Furthermore it is usual in each case to glue the thread between the top end of the infusion bag and label to this thread, for example by means of material capable of being heat-sealed and the like.

[None of the known ways of connecting and/or attaching it guarantees a secure connection or attachment of the infusion bag to the string or tag. Thus, particularly when a locking clamp is used, the string is not securely clamped between the locking clamps, so the string can slip out of the clamp relatively easily and can thus become detached from the tag or from the infusion bag. When an adhesive connection is used, there is a problem precisely apportioning and positioning the adhesive and the string. Especially,

when infusion bags for tea are used in which the infusion liquid is generally used in a heated or boiled state, an adhesive connection can be dissolved due to the relatively high temperatures and thus become unreliable.] None of the known connecting and/or fastening possibilities guarantees a reliable connection respectively fastening of the infusion bag with the label, respectively the thread.. Thus, in particular in the case of the use of a sealing clamp there is no reliable clamping of the thread within the clamp, so that the thread slides out of the sealing clamp relatively easily and thus can loosen from the label, respectively from the infusion bag. In the case of using adhesive connections there is a problem in the precise portioning and positioning of the adhesive and of the thread. In particular in the case of using infusion bags for tea, in the case of which the infusion liquid in general is used in the heated, respectively boiled state, an adhesive connection can be loosened because of the relatively high temperatures and thus become unreliable.

[Another basic problem is that the connecting media, i.e., locking clamps, adhesives and the like, have an effect that changes or influences the taste and can bother the consumer.] A further essential problem results from the fact that the connecting media, that is the sealing clamps, adhesives, and the like have a flavor-changing, respectively influencing, effect and thus are disturbing for the user.

[The two-chamber infusion bags known in the past also have the disadvantage that the chambers are very close together so that the distribution of the tea product during infusion is very unfavorable and is concentrated in a spatially small area.] Moreover, the above-mentioned double-chambered infusion bags have the disadvantage that the chambers lie very close to one another so that the distribution of the tea during the infusion is very unfavorable and is concentrated in a small spatial area.

An infusion bag of the type mentioned initially was known from FR-A-2 194 186. In the case of this infusion bag, a bag which has two chambers is fastened to a suspension unit, which is made of a sheet-like material, for example cardboard, at its top by means of a clamp, is folded in the middle along a line. In this way the bag having two clamps is located in the interior between the two sides of the suspension. Thus the bag assumes the

same position both in the packaged condition and when in use, that is, with its top side upwards, whereby in the packaged condition both chambers of the bag are surrounded by the suspension unit.

SUMMARY OF THE INVENTION

[The problem of this invention is therefore to propose a generic infusion bag that is unique in appearance and easy to handle, has improved infusion behavior and can also be produced very economically.] Starting from this known prior art the purpose of the invention is to create an infusion bag which has an improved infusion behavior and in spite of its novel appearance can be produced economically.

[As the technical solution to this problem, the invention proposes an infusion bag, especially for making tea, with chambers made of a filter material, containing a quantity of substance, wherein at least two chambers produced and filled independently of one another are connected to a hanger, at least along one common edge, into a unit.] This purpose is achieved by the invention in that at least two chambers produced and filled independently of one another, with their top side on a common connecting edge, are connected into one unit with the end of the suspension unit turned away from the gripping area, whereby the suspension unit is longer than the chambers.

[The infusion bag in the invention has the advantage that two bags produced independently of one another are arranged along one edge on the hanger and are positioned separately from one another during infusion, so there is a lot of space for the distribution of the tea. This improves the infusion behavior. In particular, there is a unique appearance by practically connecting a plurality of individual tea bags along one edge to a hanger. These individual tea bags composed of individual chambers thus form a bundle of tea bags. The special advantage of this design is that it is very economical to produce. And when a tape-like carrier material is used as the hanger, this saves tags, strings and conventional means of attachment, for example a metal clamp or string for attachment.] In the case of the infusion bag according to the invention the chambers lie with their top side downward in the package. The suspension unit, which is longer than

the chambers, projects out with its gripping area between the two chambers. This results in the advantage that the free end of the suspension unit can be grasped without the fingers of the user touching the chambers. At the time of grasping the free end and removing the infusion bag out of the package, because of the force of gravity, the chambers independently fold down around the connecting edge, so that the user has hold of the free suspension, while the chambers hang down freely by folding around the connecting edge. Because of the stresses resulting from the folding, the chambers do not lie closely together, so that the materials located in the chambers are loosened and distributed freely, which results in the improved infusion behavior.

In addition there is a novel appearance, since in practice a number of individual tea bags are connected along one edge with their suspension unit. These individual tea bags formed from individual chambers thus form a tea bag bundle. The particular advantage of this configuration is the fact that it can be produced particularly economically. Moreover, in the case of using a carrier-shaped sheet material as a suspension unit, a label, a thread, and a conventional fastening means, for example a metal clamp or a fastening thread, can be spared.

[In terms of production, it is known in the state of the art how to divide a pair of tubular strips into individual chambers, arrange them so they overlap, align the chambers with one another and connect the strips at the dividing lines between the chambers. Then, the connected pairs are separated from the other strips. This creates two-chamber packets. They are normally connected to one another on both edges formed by the dividing lines and must then still be provided with a hanger. The production technology for this is expensive and—as described above—there are disadvantage to using it.] DE-U 90 00 259.8 does show a suspension unit projecting over the chambers in the form of a rod. However, the chambers are fastened to the suspension unit in the vertical direction over the entire length. The effect of the loosening of the material to be leached out during the unfolding of the bag taken from the package achieved with the invention thus does not take place in the case of the known infusion bag.

Also, the infusion bag known from EP-A-0 448 325 differs fundamentally from the invented object. It has two chambers made simultaneously, which are connected with a label via a thread. Thus the known infusion bag differs fundamentally from the invented object.

The object of the invention disclosed in US-A 2 072 976 is an object with which portioned water is to be treated. The handle is provided with a sheet of wood or metal, on which porous containers, which contain the chemicals for treating the water, are mounted. The containers are fastened with their top side approximately in the middle of the handle, so that it has no similarity with the invention.

US-A-2 793 1290 also describes a tea bag which consists of several chambers connected together, which are fastened to a common label via a thread. Thus there is no similarity of the known tea bag with the object of the invention.

According to a further feature of the invention the sheet-like suspension unit is provided with punch holes which form a rectangular area and/or a T-shaped notch.

[According to one embodiment of the invention, first completely independent tubular strands divided into chambers and filled with medium to be infused, for example tea, are produced and each is attached to the hanger separately and cut from its strand.]

Furthermore, the invention proposes that each of the chambers be formed from tubular sheets. According to the invention these can consist of a sheet-like filter material, which is formed by welding, in particular heat sealing, of the side edges.

[In a second embodiment of the invention, the chambers are made of strips of filter material that is heat-sealed along three or four lateral edges of the chambers.] The chambers can be filled with different amounts and/or types of the substance.

[One particularly advantageous proposal in the invention is a hanger in the form of a strip-like carrier material made completely independently of these strands. The strip-like

carrier material can be preprinted. Compared to conventional tea bag tags, the advantage is that the strip-like carrier material provides large surfaces for printing. The surface can also be punched to make a hanger out of the piece of the carrier material that forms the hanger areas punched by folding out that can be suspended, for example, on the lid of the teapot or teapot spout. The strip-like carrier material can come in coils, for example. It is transported in a longitudinal direction. From one side direction, a first individual chamber strand is brought up, an individual chamber is attached to one edge on the strip-like carrier material and cut off the strand. At the same time, or in a subsequent position, a second individual chamber strand can be brought up from the other side of the strip-like carrier material. The chamber the furthest out in front is attached to the carrier material, here again, and the alignment is such that both chambers are aligned to one another with their attachment edge on the carrier material, and the second chamber is cut off from its strand. With feed control, the second attachment position on the carrier material is found now, and the attachment method is repeated. It is a special advantage that it is proposed that the carrier material positioned between the two individual chambers be made longer than the individual chambers. The carrier material is advantageously arranged between two bags. However, it can also basically carry several bags on its surface and can thus be on the outside of the whole bunch. The bags and the carrier strip are attached, for example, by welding, heat-sealing or the like.]

[Now the infusion bag in the invention can be placed in a package in such a way that the longer carrier strip projecting from the individual chambers is free on the side of the package that is opened. This has the special advantage that the person using it grasps the free end and can use the tea bag without having to touch it. When one grasps the free end and pulls out the infusion bag, because of gravity, the tea bags fold down automatically on the attachment edge, so that the user has the free hanger in his hand, while the tea bags hang down free and the attachment edge is folded. Because of the tension produced by the folding, the tea bags do not bear down hard on one another and the substance in the chambers is loose and distributed freely in the chambers, which improves its infusion behavior. If the hanger is a strip-like carrier material, as was proposed in one advantageous proposal in the invention, it can have punching, so the punching, especially

T-shaped, can be arranged on a teapot spout or a teapot lid.]

The method for producing an infusion bag according to the invention is characterized by the fact that the chambers made independently from one another are supplied to the sheet-like carrier material of the suspension unit simultaneously, and are connected with it. Alternatively the chambers can be made one after the other and connecting, first one of the chambers is connected with the sheet-like carrier material of the suspension unit along a connecting edge and then the at least 2nd chamber is connected with the carrier material and also separated from the sheet.

[Other advantages and features of the invention will be seen from the following description and figures.] Further advantages and features of the invention result from the following descriptions by means of the figures. Here:

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 shows a perspective [view] representation of [one example of] an embodiment of an infusion bag;

Fig. 2 shows a representation according to [the view in] Fig. 1 in [the] a preparation position;

Fig. 3 [is the view in] shows a representation according to Fig. 1 in [the] a use position [of use];

Fig. 4 [is] shows a schematic side view of the [view in] representation according to Fig. 1;

Fig. 5 [is] shows a schematic side view of the [view in] representation according to Fig. 3, and

Fig. 6 [is] shows a top view of [one example of] an embodiment [of a hanger] for a

suspension unit.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[The form of embodiment of an infusion bag 1 shown in the figures is comprised of two individual chambers 2 and 3, which are connected to a hanger 4 along one connecting edge 5. The chambers are closed along edges 6 and 7 and cut off of a tubular strip in the known way.] The design for an infusion bag 1 shown in the figures consists of two individual chambers 2 and 3, which are connected with a suspension unit 4 along a connecting edge 5. The chambers are sealed along their edges 6 and 7 and separated from a tubular sheet in a way known per se.

[Figure 1 shows the state of the infusion bag 1 in its packable and packed state. The hanger 4, in the form of a strip of carrier material, is longer than chambers 2 and 3 and thus projects with one free end.] Fig. 1 shows the condition of the infusion bag 1 in its packageable or packaged condition. The suspension unit 4 in the form of a sheet-like carrier strip is longer than the chambers 2 and 3 and thus projects with a free end.

[If, as shown in Fig. 2, the hanger 4 is grasped, as shown by finger 12 and the infusion bag 1 is lifted, chambers 2 and 3 fall away from one another in the direction of arrow 8, and they turn down in the area near connecting edge 5.] If, as shown in Fig. 2, the suspension unit 4 is grasped in its grasping area 11, as indicated with the finger 12, and the infusion bag 1 is lifted, chambers 2 and 3 fall away from one another in the direction of the arrow 8, whereby they unfold in the area of the connecting edge 5.

[After they are finished turning down, the state shown in Fig. 3 exists, in which the hanger area 10 of the hanger 4 is free and the chambers 2, 3 hang free ready for infusion. The seam 9 shown in Figures 2 and 3 is made out of a tubular strip in the production process of chambers 2, 3. When chambers 2,3 turn down going from the state in Fig. 2 to the position in Fig. 3, the material in chambers 2,3 is loosened and distributed freely in chambers 2,3, so that during subsequent brewing, the material stored in chambers 2, 3 can really expand and unfold its full flavor.] After the end of the unfolding, the condition

shown in Fig. 3 results, in which the suspension area 10 of the suspension unit 4 lies free and the chambers 2, 3 hang freely ready for infusion. The seam 9 shown in Figs. 2 and 3 results from the process of producing the chambers 2, 3 out of a hose-shaped sheet. By unfolding the chambers 2, 3 at the time of the transition from the condition according to Fig. 2 to the position according to Fig. 3, the substances located in chambers 2, 3 are loosened and distributed freely in the chambers 2, 3 so that the substances stored in chambers 2,3 expand well during the subsequent brewing and can develop their full flavor.

[The state of the infusion bag 1 shown in the perspective view in Fig. 1 is shown in a side view in Figure 4. Fig. 4 shows practically the state of the infusion bag 1 directly after use. Chambers 2 and 3 are attached to the hanger 4 along the connecting edge 5, and the hanger 4 is cut to length in the area near edge 13.] The condition of the infusion bag shown in Fig 1 is shown in Fig. 4 in a side view. Fig. 4 in practice shows the condition of the infusion bag 1 directly after its production. Chambers 2 and 3 are fastened along the connecting edge 5 on the suspension unit 4 and the suspension unit 4 is cut to size in the area of the edge 13.

[Fig. 5 shows the state shown in the perspective view in Fig. 3 in a side view, where it is easy to see that chambers 2,3 hang free at some distance from one another to improve the infusion behavior.] Fig.5 shows the condition shown in perspective in Fig. 3 , in which it is easy to see that the chambers 2, 3 hang freely, separated from one another, for improvement of the infusion behavior.

[Fig. 6 shows an example of embodiment of a hanger 4, consisting of a strip, for example made of film, paper or the like, which has punch holes 14, 15. Due to the punching 14, the rectangle 16 can be folded out from the hanger 4. Due to the punching 14, which is T-shaped, the hanger can be “buttoned” or otherwise arranged on a teapot spout or lid.] Fig. 6 shows an embodiment for a suspension unit 4, consisting of a strip, for example made of foil, paper, or the like, which is provided with punch holes 1, 15. Suspension unit 5 can be unfolded through punch hole 14. Through the punch hole 15, which is

made T-shaped, the suspension unit can be "buttoned", respectively mounted, on a teapot spout, on the cover of the teapot, or otherwise.

[The hanger 4 is a part made of a material, preferably in the shape of a strip, that is printed and if necessary punched. During production, it is moved along a feed direction and in the example of embodiment shown, connected first by one side to a chamber 2, then by the other side, to a chamber 3. The chambers are cut off of their corresponding strands after the connection is made. After a corresponding feed, the hanger 4 is cut off the strip, to form the embodiment shown in Figs. 1 and 4.] Suspension unit 4 is a piece of a preferably printed, and in a given case punched, carrier material. During production this material is moved along a direction of advance and in the embodiment shown is connected first from one side with a chamber 2 then from the other side with a chamber 3. The chambers are separated from their respective cords after the connection is made. After a corresponding advance the suspension unit 4 is separated from the sheet, so that the configuration shown in Figs 1 and 4 results.

[The chambers can also be arranged on only one side of the hanger 4, or there can be different numbers of chambers arranged on both sides. Of course, the chambers can also have different contents, for example different types of tea and/or aromatic substances, to prepare mixtures simply in this way.] Different number of chambers can be located on both sides. Of course, the chambers also can have different contents, for example different sorts of tea and/or aromatic substances, in order to prepare mixtures simply in this way.

[Besides the form shown for making the chambers 2,3, it is also possible to produce the chambers 2,3 out of a strip of filter material, wherein the side edges of chambers 2,3 are preferably closed by heat-sealing.] In addition to the shape for making the chambers 2, 3 shown, it also is possible to make the chambers 2, 3 out of a sheet-like filter material, the side edges of the chambers 2, 3 are sealed, preferably by heat sealing.

The examples described are used only for explanation and are not limiting.

[Reference List

- 1 Infusion bag
- 2 Chamber
- 3 Chamber
- 4 Hanger
- 5 Connecting edge
- 6 Edge
- 7 Edge
- 8 Arrow
- 9 Seam
- 10 Hanger area
- 11 Grasping area
- 12 Finger
- 13 Edge
- 14 Punching
- 15 Punching]